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A Generalized Technique for Constructing Achievement Tests
RALPH W. TYLER

Ohio School Law in the First Quarter of 1931
M. M. CHAMBERS

Vol. X
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APRIL 15, 1931

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Educational Research Bulletin

APRIL 15, 1931

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A Generalized Technique for Conducting Achievement Tests

By RALPH W. TYLER

THE construction of achievement tests in higher education at Ohio State University presents certain problems which are common at all educational levels. Many college instructors are suspicious of objective examinations, and not without reason. Not only are many objective tests quite different from the examinations to which they are accustomed, but it is also difficult for them to determine whether the tests provide a measure of the objectives of the subject they are teaching. It is, therefore, natural that they should be cautious in relying upon such examinations. Hence, a fundamental task in constructing achievement tests which will be used by college instructors is to make certain that the important objectives of the subject and course are adequately measured.

This is so obvious a requirement for a valid examination that there is nothing new in the suggestion that it is the essential criterion for validity. However, techniques of test construction in which test items are consciously derived from the specific objectives of the course are much more rare. Thus, Ruch in his recent text on building objective examinations covers the derivation of the test items in two steps, drawing up a table of specifications, and drafting the items in preliminary form.[1] This first step covers the relation of test items to objectives, but the assumption commonly made by the reader is that the table of specifications is merely a topical outline and not an outline of objectives. That there are other objectives to be measured besides information is not adequately emphasized.

Similarly, in an earlier book, Wood, describing the achievement tests used in Columbia College, recognized that the test

[1] Ruch, G. M. *The Objective or New Type Examination.* Chicago: Scott Foresman and Company, 1929. pp. 149–59.

items were derived directly from an analysis of the informational content of the course only. However, he stated that every experimental study thus far made and reported has shown a very high relationship between measurements of information in a field and intelligence or ability to think in the material of that field.[2] This has not been found true in the elementary biology courses at Ohio State University. We found the correlation with the scores on information tests of tests of application of principles to be only .40; of tests of interpretation of experiments to be only .41; and of tests of the formulation of experiments to test hypotheses to be only .46.

IN DEFENSE of Mr. Wood's position, it may be pointed out that these correlations are higher in advanced courses. Nevertheless, in elementary courses, the correlations are all too low for one to obtain valid measurements in these classes by use of an information test only. Tests need to be constructed for each of the important objectives in a course.

Peters in analyzing the methods employed in validating standard tests showed that few tests were validated against educational objectives, and suggested that tests should be derived on this basis.[3] Unfortunately, he does not describe a technique which could be generally followed in deriving test items from objectives. It, therefore, seems apparent that although some college instructors are properly demanding tests which measure the attainment of each of the objectives of their courses, the usual method of test construction based upon an analysis of informational content alone will not meet this demand. Accordingly, we have been using a general technique for achievement-test construction which involves these steps:

1. Formulation of course objectives
2. Definition of each objective in terms of student behavior
3. Collection of situations in which students will reveal presence or absence of each objective
4. Presentation of situations to students
5. Evaluation of student reactions in light of each objective
6. Determination of objectivity of evaluation

[2] Wood, Ben D. *Measurement in Higher Education.* Yonkers-on-Hudson, New York: World Book Company, 1923. p. 163.

[3] Peters, C. C. "The Relation of Standardized Tests to Educational Objectives," *Second Yearbook of the National Society for the Study of Educational Sociology.* New York: Teachers College, Columbia University, 1929. pp. 148–59.

7. Improvement of objectivity, when necessary
8. Determination of reliability
9. Improvement of reliability, when necessary
10. Development of more practicable methods of measurement, when necessary

The task of formulating objectives is a necessary first step in any case where no curricular study has previously been made. Obviously, the step can be omitted when objectives have previously been formulated. The character of these objectives is illustrated by those formulated by the Department of Zoölogy for the elementary courses. These were presented recently.[4]

THE nature of these objectives determines the variety of the achievement tests to be constructed. It is obvious that the measurements of the information which a student possesses may be done with a paper and pencil examination, while a test of skill in use of the microscope would require a different set-up. The variety of examinations required in college achievement tests is indicated by our work with several departments of the University. Thus far we have found at least eight major types of objectives. These are:

Type A, Information, which includes terminology, specific facts, and general principles

Type B, Reasoning, or scientific method, which includes induction, testing hypotheses, and deduction

Type C, Location of Relevant Data, which involves a knowledge of sources of usable data and skill in getting information from appropriate sources

Type D, Skills Characteristic of Particular Subjects, which include laboratory skills in the sciences, language skills, and the like

Type E, Standards of Technical Performance, which includes the knowledge of appropriate standards, ability to evaluate the relative importance of several standards which apply, and skill or habits in applying these standards

Type F, Reports, which include the necessary skill in reporting projects in engineering or reporting experiments in science and the like

Type G, Consistency in Application of Point of View, which is most apparent in courses in philosophy

Type X, Character, which is perhaps the most inclusive, involving many specific factors

[1] Tyler, R. W. "Measuring the Ability to Infer," EDUCATIONAL RESEARCH BULLETIN, IX (November 19, 1930), p. 475.

This first step, formulating course objectives, is necessary in order to indicate what the tests are to measure and thus to define the variety of tests essential for an inclusive measurement of student achievement. When present standard tests are compared with this list of types of objectives large areas are found which are as yet untouched.

The second step is to define each objective in terms of student behavior. This is most useful because it suggests the set-ups required for the preliminary test. How this differs from the analysis-of-content method usually used in test construction may easily be shown by illustration. Textbooks in zoölogy describe certain experiments that have been performed which show that a frog responds to light stimuli in his feeding reactions. A textbook analysis would include the description of these experiments, but on the usual basis of test construction it would be assumed that the student is expected to remember these descriptions. A test would then be constructed which would disclose whether or not the student remembers the details of these experiments. In contrast, a definition of objectives in terms of student behavior does more than indicate the content to be covered. It defines the reactions which a student is expected to make of this content. Thus the Department of Zoölogy defined their third objective, the ability to draw inferences from facts, by stating that students should be able to observe such experiments as those dealing with the feeding reactions of frogs, or to read the results of experiments and from the facts thus obtained propose hypotheses which would constitute reasonable inferences from these experiments. It is not expected that a student will remember the details of an experiment, but upon being given the details will be able to interpret the experiment for himself. Obviously, with the same content it makes a great deal of difference whether the test is to measure the student's memory of the facts or to be able to interpret them when they have been presented to him.

Each of the eight objectives set up for elementary courses in zoölogy was defined in terms of the behavior expected of students. In defining the first objective, a fund of information about animal activities and structures, the specific facts and general principles which the students should be able to recall without reference to textbooks, or other sources of information, were indicated. The second objective, an understanding of

technical terminology, was defined by listing the terms which the student himself should be able to use in his own reports, and another list of terms which he would not be expected to use, but should be able to understand when he finds them in zoölogical publications. The third objective, an ability to draw inferences from facts, that is, to propose hypotheses, was defined by describing the types of experiments which an elementary student should be able to interpret. The fourth objective, ability to propose ways of testing hypotheses, was defined by listing the types of hypotheses which an elementary student should be able to validate by experiment, or to propose ways of validation. The fifth objective, an ability to apply principles to concrete situations, was defined by listing the principles which elementary students should be able to apply, and types of concrete situations in which the student might apply these principles. The sixth objective, accuracy of observation, was defined by listing the types of experiments in which elementary students should be able to make accurate observations. The seventh objective, skill in use of the microscope and other essential tools, was defined by describing the types of microscopic mounts and types of dissections which elementary students should learn to make. The eighth objective, an ability to express effectively ideas relating to zoölogy, was defined by indicating the nature of the reports, both written and oral, which zoölogy students are expected to make and the qualities demanded for these reports to be effective.

THE mere enumeration in this way of data obtained by this second step suggests the large amount of raw material thus made available which will form a direct basis for test construction. It is, of course, true that these first two steps are largely curricular problems and must be a function of the department concerned. Neither of the steps could be done by the technician in test construction. He can only outline the specifications demanded, while the formulation of objectives and their definition in terms of student behavior must be done by the department concerned.

The second step has served to define the types of situations in which students will reveal the presence or absence of each of the objectives of the course. The third step is undertaken to collect samples of specific situations which belong to each of

the types. A fundamental assumption in all testing is that a sampling of student reactions will give a measure of his reactions in a much larger number of situations. So it is necessary to collect a sampling of situations which might be used to test each of the objectives formulated for the course. The sources for these situations depend upon the nature of the objective. In the case of the third objective proposed for zoölogy, the ability to draw inferences from facts, the most productive source of situations was the current research in the field of zoölogy. From this source the results of new experiments can be obtained which can be presented to students to test their ability to interpret these experiments. Since they are new experiments the students cannot interpret them from memory of textbook interpretations. Similarly, productive sources for the fourth objective, the ability to propose ways of testing hypotheses, was found in the problems proposed for investigation by various research workers in the field. Since these problems have never been investigated the student cannot depend upon his memory of the method of attack used by others. For each objective the ingenuity of the test maker and of instructors in the department concerned is required in order to find productive sources of test situations which are available.

The fourth step, presenting the situation to the students, is primarily the function of the test constructor. He must develop a method of administration which makes it possible to present these situations to the students and to get a record of their reactions. In the case of accuracy of observation it was necessary for us to have experiments performed which could be observed by every student in the group and then to develop a record blank upon which the student could record his observations. In testing skill in use of the microscope it was necessary to develop a check list of student reactions so that an observer could make a record of the actions of each student in his attempt to use the microscope. Those situations which are verbal in character, such as the memory of important principles, are easily presented to students in written examinations.

The fifth step, evaluating the student reactions in the light of each objective, is essentially a co-operative one in which the department has certain functions and the test technician certain other functions. The technician sets up specifications for the

standards to be used in evaluating students' reactions and specifications relative to the objectivity required. The instructors in the department concerned formulate the standards to be used in evaluating reactions and they make those evaluations which are not wholly objective in character. In the case of tests of information, the department can prepare a key which is wholly or almost wholly objective and clerks can score the students' reactions. In the case of tests of ability to draw inferences from facts it was necessary for the department to set up standards to be used in evaluating students' inferences and for the instructors to evaluate the responses since these standards were not wholly objective.

After the preliminary evaluation of students' reactions it is necessary to take the sixth step for those evaluations which are not wholly objective. The method followed in determining the objectivity of the evaluations of students' inferences was to have these inferences judged by several instructors in the department independently, and then to determine the variations in the evaluations of each paper. When there is found to be any significant variation in the evaluation from one instructor to another the seventh step, improving objectivity, is necessary. In the case of evaluating inferences this was done as follows: Each different inference was typed upon a 3 by 5 inch card, and each instructor in the department was given a set of cards. They were asked to evaluate each inference by placing it in one of five piles, Pile I representing the poorest, and Pile V the best. They were asked to try to make the differences between Pile I and Pile II, between II and III, between III and IV, and between IV and V equal. These evaluations were made by fifteen instructors, and the mean rating of the group was accepted as the most appropriate rating for each inference. We found that we could take the ratings of any three instructors at random and in no case would the mean rating of the three instructors on any inference differ more than .3 from the mean rating given by the entire group, hence a relatively high degree of objectivity could be obtained by using the ratings of the three instructors.[5]

After a satisfactory degree of objectivity has been obtained

[5] This technique is described in more detail in the Bulletin article to which reference was previously made.

the next step is to determine the reliability; that is, the adequacy of the sample of test situations used to measure that particular objective. This can be done by the usual method of submitting a second random sample of test situations to the same students and correlating the scores from the two samples. When the correlation coefficient has been calculated, it is possible to determine the number of test situations required to obtain any satisfactory degree of reliability. In case the reliability of the preliminary test is too low the ninth step is necessary. To improve the reliability of the preliminary examination the provision of a larger sampling of test situations is usually sufficient since the final test will often be quite different.

If the first nine steps have been carried through to completion an objective, reliable, preliminary test for each of the course objectives has been obtained. Very often this preliminary test may be difficult to administer and expensive of time and facilities in scoring. Hence the development of more practicable methods of measurement becomes a problem of some importance. The preliminary test now serves as a criterion against which the proposed practicable form of test may be checked. It seems to me that this preliminary test is a much more adequate criterion of validity than the usual set of teachers' marks. Not only are teachers' marks somewhat unreliable, but they are often not diagnostic; that is, they do not distinguish between the student's attainment of different objectives separately. Our work to date has shown quite clearly that the correlation between the student's attainment of one objective and his attainment of another may be quite low. Thus we found a correlation between skill in use of the microscope and memory of information to be only .02, between an understanding of technical terms and ability to draw inferences from facts only .35, between information and ability to apply principles to concrete situations only .40. These correlations are so low that we are justified in preparing separate tests for each of the objectives so that the instructor may diagnose the difficulties of students in achievement with reference to each objective separately. These preliminary tests give criteria for validating diagnostic tests.

To illustrate the development of more practicable methods of measurements in case a preliminary test is more or less

impracticable, the test of ability to draw inferences in zoölogy might be used. The preliminary test required the typing of the inferences on cards 3 by 5 inches and their evaluation by three instructors. This is an expensive and time-consuming process so that a more practicable test would be of great value. An attempt was made to use a multiple-response test. To validate this test the students were given a set of data from experiments and asked to propose reasonable inferences as before. These exercises were then collected, and the class was given the same set of data followed by five alternative inferences the best of which was to be checked. The results of these two tests were correlated, but the coefficient of correlation was only .38. Hence, it was clear that this multiple-response test could not be used in place of the preliminary test.

Next we developed a larger number of alternative responses. These alternatives were first submitted to the three instructors for evaluation. They were then incorporated in a new test which was submitted to a class at the same time that a test proposing inferences was administered. The student was asked to select the best and the poorest inferences. The new test was scored by adding the credit values of the inferences which were marked as best and subtracting the credit values of those marked as poorest. These credit values were the mean ratings given the inferences by the three instructors. The student's response for each item then was not counted either right or wrong, but his score might be anywhere from $+5$ to -5. These new test scores were correlated with the students' scores on proposing inferences giving a coefficient of .85. This last test has much higher validity for this purpose than the ordinary multiple-response test, and is much more practicable than the preliminary test.

THIS brief description of techniques in use in constructing achievement tests at Ohio State University suggests clearly the co-operative nature of the enterprise. No test technician alone, unless he is an expert in the field of subject-matter, can construct an achievement test which is certain to be valid. The members of the department concerned must formulate the course objectives, must define the objectives in terms of student behavior, must collect situations in which students will reveal the presence or absence of each objective, and must

provide the method of evaluating the students' reactions in the light of each objective. The test technician sets up the specifications for the course objectives and for the definition of objectives in terms of student behavior. He must assist in the collection of test situations, must formulate a plan for presenting the situations to students, must set up specifications for the evaluation of students' reactions, must determine the objectivity of the evaluations, and develop a plan for improving objectivity when necessary, and he must determine the reliability of the test, and improve the reliability when necessary. The department concerned and the test technician together must develop more practicable methods of measurements when necessary, while the test technician determines their validity and reliability.

This brief description should also have revealed certain features in these techniques of test construction which are different from those usually followed. The first of these is the analysis of objectives in place of the analysis of content alone. This reveals a much wider field for objective testing than is likely to occur to the test constructor who depends upon an analysis of content. For example, certain test technicians recently have been publishing articles dealing with such questions as "Is the true-false test superior to the multiple-response test?" "Should the true-false test or the essay type test be used?" It is obvious that these questions cannot be answered in general terms. The real question is how to measure particular objectives, not how to measure students' reactions in general. The true-false test may be a superior method for testing the student's memory of information, yet it might be quite inferior as a means of testing his ability to organize ideas.

The second difference between this technique and the usual method is that the test situations used in the preliminary tests are not selected from a few general types of tests now in use, but are obtained directly from the analysis of the course objectives in terms of student behavior. The third difference is that the final test is validated against the preliminary test and not against teachers' marks. This permits the development of diagnostic tests measuring each objective separately. It gives a criterion of validity which is probably more valid and certainly more exact and reliable than teachers' marks.

Ohio School Law in the First Quarter of 1931

By M. M. CHAMBERS

THREE decisions of courts of appeals and numerous opinions of the Attorney-General on school matters were reported during January, February, and March.[1] These may be epitomized and grouped under appropriate headings to give an orderly picture of the developments of the quarter.[2]

Membership on a county board of education is not incompatible with incumbency of the office of township trustee, and an elector may hold both posts at the same time, since neither is a check on the other nor subordinate to the other. Village or rural school-board membership is incompatible with the position of township trustee, because the township and the rural or village school district may be in the position of adversaries in the conferences wherein the county budget commission adjusts the budgets of local taxing subdivisions.[3]

Members of county boards of education must be paid $3.00 per day and mileage at the rate of ten cents per mile one way for attendance upon any meeting of the board, as provided by statute, regardless of the actual expenses they incur.[4]

In case of a proposed transfer of territory from one district to another, the people's right of remonstrance is not to be defeated by concealment of proceedings until the limit of time for a protest has passed. This is the gist of a recent decision handed down by the Court of Appeals for Scioto County.[5] The evidence showed that the Scioto County Board of Education passed a resolution March 15, 1930, in pursuance of its authority under Section 4736, *General Code*, abolishing the Wheelersburg Rural School District and incorporating it into a new and larger district, adjusting its fiscal relations, and appointing a new board of education for the new district, and actively concealed these proceedings until April 17, 1930, so that no person affected by them became aware of what had transpired until after the lapse of more than thirty days. Section 4736 provides that:

[1] The last ten days of March are not covered by this report.

[2] All subsequent footnote references are to Opinions of the Attorney-General, by number and date, except when otherwise indicated.

[3] 2896, February 2, 1931.

[4] 2888, January, 1931.

[5] *Groh et al.* v. *Viglet et al.*, 34 O.L.R. 130. Decided June 16, 1930.

Such action of the county board of education shall not take effect if a majority of the qualified electors residing in the territory affected by such order shall, within thirty days from the time such action is taken, file with the county board of education a written remonstrance against it.

The statute does not expressly require that notice must be given to the persons whose rights are affected, but the court points out that there is an implied limitation which is operative against every administrative board; namely, that "fraud, bad faith, or the taking of such arbitrary, whimsical and unreasonable action as amounts to an abuse of discretion" will warrant the intervention of the courts. In this case the board's active concealment of its resolution amounted to a degree of bad faith sufficient to justify the court in setting aside the entire proceedings, and it was so ordered.

Interpreting Secs. 7669 and 7670, *General Code*, which empower the boards of education of two or more adjacent school districts under certain circumstances to unite their districts for high-school purposes, the Attorney-General has ruled that the joint committee composed of two members of each such board, constituted for the management of the joint high school, has no power to purchase a site or let a contract for the erection of a high-school building. He further points out that the two or more boards concerned are without authority to meet together and vote on these matters as a joint body. Instead, the result must be reached by each board acting separately and concurrently. There is no provision in the statutes for action as a joint board, whereby the legal entity of one board would be temporarily merged with that of others. The integrity and autonomy of each of the co-operating districts are at all times maintained, according to the terms of the statute.[6]

SECTION 7635 and those directly following it in the *General Code* authorize local boards of education to establish free public libraries in their districts and to elect boards of trustees to have charge of the administration of such libraries. A clear-cut definition of the relations between the board of education and the board of trustees of such a free public library in the same district is given in a recent opinion of the Attorney-General. The board of education is powerless to direct the policy of the board of library trustees. It cannot dictate to the

[6] 2954, February 17, 1931.

library board concerning the expenditure of funds in its hands for library purposes, nor alter the budget of the library board except when it is necessary to decrease it in order to bring it within the limitation of the tax levy. The board of education cannot require the library board of trustees to maintain branch libraries or library services in school buildings, but it may establish school libraries in addition to the free public library, or contract for school library service with any other public library in the district. In brief, the board of trustees of a free public library created under Section 7635 constitutes a distinct independent unit of government for the purpose of providing a free library service to all the inhabitants of the school district.[7]

A board of education is not liable in its corporate capacity for injuries received by patrons of a football game, by reason of the collapse of bleachers or otherwise, on the playgrounds under its jurisdiction; and it is immaterial that those patrons were charged an admission fee.[8] Neither is a board of education liable in tort for accidents occurring on its playgrounds while in use by other districts or by private parties who pay fees for such use.[9] The rule covering both of these matters is that a board of education has no tort liability except when it is directly and expressly imposed by statute. There is no such statute in Ohio.

In a recent case the Court of Appeals of the Fifth District refused to invalidate a bond issue of $400,000 for the erection of a new high-school building at Delaware on the ground that the amount of the bond issue had not been reduced by the application of the insurance collected on the old building which had been destroyed by fire. The court held the application of insurance to the construction of a new building is not requisite to the legality of a bond issue for the same purpose.[10]

The Attorney-General ruled in February that a local school board may borrow money in anticipation of taxes, for the purpose of paying any valid and subsisting obligation against it, whether of the current fiscal year or of previous years. The aggregate of such loans must not exceed one-half of the amount estimated to be received from the next ensuing annual

[7] 3003, February 27, 1931.
[8] 2804, January 7, 1931.
[9] 2826, January 15, 1931.
[10] *Hoffman et al.* v. *Pounds et al.*, 36 Ohio App. 102. Decided June 9, 1930.

settlement of taxes. There must be no anticipation of the February tax settlement before January 1. Notes issued for such borrowed funds are not to run longer than six months.[11]

Another opinion of the Attorney-General declares that a local board is without authority to issue bonds in any sum for the purpose of paying rental on a heating plant since the authority to issue bonds is limited to the purpose of acquiring or constructing improvements of an estimated usefulness of not less than five years.[12]

THE only school-tax question that came to the Attorney-General was that involved in a transfer of territory from one district to another under authority of Section 4692, *General Code*. In such event the county board of education is empowered to determine an equitable share of both the accumulated funds and indebtedness of the parent district which shall be transferred into a new district of which the transferred territory becomes a part. If the county board, in making such determination, inadvertently works a hardship upon the residents of the transferred territory they can receive no relief by way of abatement of taxes in the new district, since there is no statutory authority whereby either a county board or a local board of education can discriminate in favor of any portion of the territory under its jurisdiction in the levy and collection of taxes.[13]

The Attorney-General has also ruled that where a rural school district has absorbed a village school district under the provisions of Section 4682–1, *General Code*, any unexpended balance remaining in the bond-retirement fund of the absorbed district after all its bonds have been retired shall be transferred to the bond-retirement fund of the present rural district. If the present district has no bonds outstanding, then the transfer is to be made to some other fund of the district with the approval of the Court of Common Pleas.[14]

Regarding the custody of the funds of a local school district, the Attorney-General rules that the board of education may lawfully contract with a bank outside the district and conveniently located, which offers the highest rate of interest not

[11] 2993, February 25, 1931.
[12] 2997, February 25, 1931.
[13] 2988, February 25, 1931.
[14] 2902, February 2, 1931.

less than 2 per cent and furnishes proper security, for deposit of the monies of the district if there is no bank in the district qualified to receive the deposit; also, if there is a local bank under contract as depository of school funds, but whose capital and surplus is less than the amount desired to be deposited by the board, then the board may contract with an outside bank for deposit of its surplus.[15] A depository bank must furnish a surety bond or other adequate security sufficient to cover all

TABLE I

SOME SCHOOL BOND ISSUES EXAMINED AND FOUND REGULAR BY THE ATTORNEY-GENERAL, JANUARY, FEBRUARY, AND MARCH, 1931

School District	County	Amount of Bond Issue
(1)	(2)	(3)
Sidney City	Shelby	$250,000
Springfield Township Rural	Summit	210,000
Mentor Rural	Lake	200,000
Magnolia Rural	Carroll	170,000
Plain Township Rural	Stark	165,000
Covington Village	Miami	150,000
Bluffton-Richland Village	Seneca	148,000
Lordstown Township Rural	Trumbull	95,000
Louisville Village	Stark	90,000
Perry Township Rural	Allen	89,000
Jackson Township Rural	Stark	80,000
Bokescreek Rural	Logan	75,000
Perry Rural	Lake	73,500
Fort Recovery Village	Mercer	58,000
Stokes Township Rural	Madison	50,000
Waterville Village	Lucas	50,000
Champion Township Rural	Trumbull	45,000
Grove Hill Rural	Paulding	45,000
York Township Rural	Morgan	45,000
Salt Creek Township Rural	Muskingum	30,000
Brown Township Rural	Franklin	25,000

school funds deposited with it and must bear the expenses of this bond without aid from the board of education, even though it may be paying a rate of interest on school funds higher than that called for by its contract.[16] This is because there is no authority for a board of education to expend public funds for such a purpose under any circumstances.

During the quarter the Attorney-General examined and approved transcripts of the proceedings in school bond issues aggregating more than $2,000,000. Several of the larger of

[15] 2955, February 17, 1931.
[16] 2825, January 15, 1931.

these issues are grouped in Table I, which names the districts and shows their distribution in the state by counties. Several smaller school bond issues, ranging from $800 to $22,000, were also examined and found regular.

If a school-building site is donated to the district by the owner, under circumstances which amount to a dedication of the lands for school purposes, the title reverts to the grantor or his heirs if the site is subsequently abandoned for school purposes. It is otherwise if the land was conveyed to the district by a general warranty deed, evidencing a sale and not a gift; and the board of education may abandon the site and sell it, giving a clear title to the purchaser.[17]

A board of education has no power to lease property which it holds in trust for school purposes, in the absence of statutory authority. However, if the board incidentally becomes possessed of buildings which are not needed for school purposes, and which cannot immediately be disposed of advantageously, it may lawfully permit them to be temporarily occupied for other purposes, and accept rental for such use, until the buildings may be sold in compliance with Section 4749, *General Code*.[18]

WHEN a local board of education elects its clerk without specifying any fixed term of service and without reservation of the right to terminate the clerk's service at the pleasure of the board, the person so elected is entitled to serve for two years unless sooner dismissed for cause. Section 4747, *General Code*, provides that the clerk may or may not be a member of the board and shall serve for a term not exceeding two years. Under this section, the board could specify a shorter term or could employ him to serve at its pleasure, but unless some such provision is made at the time of his election he is entitled to a two-year term.[19] Section 7701 authorizes the dismissal of any school-board employee for inefficiency, neglect of duty, immorality, or improper conduct.

A city school board is not authorized to pay mileage to its employees for the use of their privately owned cars from their homes to the office, or school, and return. A teacher may lawfully be employed as early as March 1 of any calendar year

[17] 2873, January 5, 1931.
[18] 2886, January, 1931.
[19] 2914, February 5, 1931.

for service during the next ensuing school year.[20] The appointment of a teacher must not be more than four months in advance of the beginning of the school year. Under the statutes the school year legally begins July 1.

A board of education has authority to employ a trained nurse to aid its physician or dentist in physical examination and diagnosis of children, teachers, and janitors, but cannot employ a nurse unless and until it employs a physician or dentist, in the opinion of the Attorney-General.[21]

The Court of Appeals of the Fourth District has decided that if a prospective teacher receives a mailed offer of a contract of employment from a school board not specifying how long the offer will remain open and holds it seventeen days before mailing her reply and acceptance, the offer may be held to have lapsed and no contract to have been created. The rule is that the offeree in such a case has a reasonable time in which to act with due diligence in formulating his acceptance and placing it in course of transmission if the mail is the means of transmission used. The question of what is a reasonable time is for the jury. The school board in the present case employed another teacher after its offer to the plaintiff had subsisted fourteen days without acceptance. The board's action was upheld in the appellate court.[22]

A LOCAL board of education has authority under Secs. 7684 and 7764, *General Code*, to assign a pupil to a school subject to the exception provided for in Section 7735 as follows:

> When pupils live more than one and one-half miles from the school . . . they may attend a nearer school in the same district or if there be none nearer therein then the nearest school in another district, in all grades below the high school.[23]

Unless the pupil falls within this exception his parents will be liable to the penalties provided for in the compulsory-attendance law if they fail to send him to the school to which he has been assigned. Parents cannot withdraw their children from one school and transfer them to another for the sole purpose of embarrassing the school board or teachers.

[20] 3006, February 27, 1931.
[21] 3006, February 27, 1931.
[22] *Ward* v. *Board of Education of Harrison Township Rural School District, Gallia County*, 36 Ohio App. 107. Decided June 26, 1930.
[23] 2749, December 30, 1930.

Where a school bus is operated on a hard-surfaced road passing within 3/10 of a mile of the home of pupils the board of education has no authority to pay the parents for the transportation of the pupils from their home to the bus. The obligation of the board to transport pupils is fully discharged when it runs a conveyance within one-half mile of the pupil's residence or the private entrance thereto.[24]

LANDS belonging to the board of trustees of Miami University by statute exempted from all "state taxes" are not liable to pay the 2.65 mill levy for public schools, and the fiscal authorities of Butler County have no power to collect this levy against such lands.[25]

The Ohio State University may become the owner of patents by assignment from the nominal patentee on devices developed in its engineering experiment station. The Attorney-General has ruled that the University is without authority to manufacture and sell the thing patented or to use the process patented for commercial purposes or to sell the patent outright or to grant a license to another to use it on a royalty basis, as is commonly done by private owners of patents. He concludes that the results of the work of the experiment station belong to the people of the state and patents resulting therefrom should be "dedicated to the public of the State of Ohio."[26]

[24] 3013, March 3, 1931. *See also*, 2790, January 2, 1931, which a girl may not be certified as a school-bus driver, EDUCATIONAL RESEARCH BULLETIN, X (January 7, 1931), p. 22.

[25] 2839, January 17, 1931.

[26] 2929, February 10, 1931.

* * *

A BRIEF description of the procedure followed in developing a standardized test is presented in Test Service Bulletin No. 24, "The Cost of a Standardized Test," published by the World Book Company, Yonkers-on-Hudson, New York. Although the bulletin does not describe in detail the essential steps in constructing a good test, enough facts are given to make clear to the reader some of the technical difficulties involved in preparing standardized measurements. The discussion may be found useful in making clear why some tests are expensive.

EDITORIAL COMMENT

A Library

THE trustees of the school at a town called Erehwon decided upon the funds for the library before settling the outlines of the budget for buildings and equipment. They believed that the library is the center of instruction through which the records of civilization are passed down to the young from generation to generation. They believe that the wide reading of good books is the most efficient medium known for acquiring information and ideals. They are convinced that a love of reading is a major objective of education. They have noticed, too, that when the young are confined to a narrow range of textbooks, interest wanes and attention falters. Being both logical and practical, they are building a library commensurate with the situation.

At Erehwon, the library rooms are attractive. The seats are comfortable, the shelves are accessible, the lighting is agreeable, the nooks are cozy, and the tables are large. The trustees and the faculty give much thought to the project of making the conditions right to engender a love of reading. They utilize the best ideas of the most sensible of the national experts and add individual touches of their own.

The librarian in Erehwon is a lover of books and of children. She has the bibliographer's flair for searching for titles. She will not willingly desist until she has found the reference that fits the need. Besides being a good housekeeper she is also a good home-maker. Less concerned about preserving order among her books than about strengthening the interests and tastes of her children, she "places the boy above the book." The trustees provide her with an ample staff of lovers of books and children like herself so that the child, in full chase of an idea, may increase his speed and effort. That the supply of librarians who have training equal to hers is not yet sufficient to meet the demands at Erehwon is not a serious matter for her, because she picks young people with intelligence and love for books and children, and trains them.

This librarian works with children, but her most important students are the faculty. She knows that every time she trains

a teacher to teach children to love books and to use them intelligently, she has cared for the training of a roomful of children. In her school, the teachers are her understudies and lieutenants, and her major responsibility is to coach them in the techniques of teaching the use of books. Fortunately, as the years have passed, she has acquired confidence in herself as a master of library craft, and is no longer afraid of the specialized knowledge of the faculty. She realizes that, while they know their subjects better than she, they are inferior in the ability to find the range of materials which she has accessible in her files. She moves among them as a master, and, particularly with the younger teachers and those unused to Erehwon, she is a trainer, a stimulator, and a polisher of library techniques.

The writer presents this brief statement as an item of news that is of importance to those schools who give the library the tag ends of the budget after the other needs of the school are cared for, who keep the books under lock and key, who store them in inaccessible places and dreary rooms, and who have not yet seen the need for real library service. What they do at Erehwon can be done anywhere if the school officers and faculty members feel strongly enough upon the subject to press it with persistence and with imagination. W.W.C.

THE Second Annual Institute for Education by Radio will be held on the Ohio State University campus from June 8 to June 12, 1931. This institute, a project undertaken in 1930 for the first time, is sponsored this year by the Ohio State Department of Education and the Ohio State University, which were jointly sponsors with the Payne Fund for the 1930 sessions.

Featured speakers who are being announced as taking part in the program of the Institute are: Clem F. Wade, president of the Western Television Corporation; Harold M. Lafount, a member of the Federal Radio Commission; W. C. Bagley, Jr., of the American School of the Air; Levering Tyson, director of the National Advisory Council on Radio in Education; W. S. Hendrix, chairman of the Romance Languages Department of Ohio State University; B. H. Darrow, director of the Ohio School of the Air; W. W. Charters, director of the Bureau of Educational Research, Ohio State University; Margaret Harrison, Teachers College, Columbia University; and Armstrong Perry, of the United States Office of Education.

READINGS

BUTTERFIELD, W. W. "School-Dull and Life-Bright," *Journal of the National Education Association*, XX (April, 1931), pp. 111–14.

In an interesting style, which through its narrative introduction brings novelty to the usual type of academic writing, the State Commissioner of Education of Connecticut campaigns against the unintelligent use of the I.Q., which so often condemns the unusual student to the ranks of the dull, since he does not fit into any ready-made pattern.

Since educators have fallen into the habit of sorting out the school-bright, these same pupils progress toward the stage of college-bright. "All deans today believe in predestination, not, however, for heaven but for Harvard or for some other college in its apostolic succession and they assert that the seal of sanctification is an I.Q. over 125." A reorganization of school attitude to recognize the kinds of brightness other than academic aptitude is urged.

GUILER, WALTER SCRIBNER. "Improving Ability in Verb Usage," *Elementary School Journal*, XXXI (March, 1931), pp. 524–30.

During the school year 1929–30, an experiment in remedial work on grammatical usage was conducted with a group of ninth-grade pupils in the Hanover Township Centralized School, Butler County, Ohio. The group was heterogeneous in ability, a wide range in achievement existing. The median for the class in verb usage was below the eighth-grade standard. Diagnosis of specific shortcomings was the next step, followed by remedial instruction on the basis of a diagnostic chart of individual weaknesses.

A retest was given to measure the amount of improvement under the remedial program. The experiment seemed to point to a distinct need for individualized remedial instruction, to lack of transfer of training in verb usage and to marked improvement under a remedial program based on diagnosis.

LINCOLN, EDWARD A., AND SHIELDS, FRED J. "An Age Scale for the Measurement of Moral Judgment," *Journal of Educational Research*, XXIII (March, 1931), pp. 193–97.

With the growing opinion that moral judgment is dependent on intelligence, new light is cast on the efforts of those who attempt to measure the ability to make moral discriminations. These authors describe a test and results obtained from it, and conclude that there is a gradual development of moral judgment from childhood to maturity, but that there are a large number of high-school boys and girls from fifteen to seventeen years of age who do not recognize any unusual number of moral differences.

LYMAN, R. L. "Individualization in the Isaac E. Young Junior High School, New Rochelle, New York," *School Review*, XXXIX (April, 1931), pp. 257–71.

The junior high-school principal who wishes to discover the practices utilized by progressive schools in meeting problems of individual differences

should turn to this stimulating and well-written article. The treatment of curriculum constants and electives, ability grouping, and differentiated curriculums in the Isaac E. Young Junior High School is sufficiently novel to merit thoughtful scrutiny.

WETZEL, WILLIAM A. "Large-Group Instruction," *School Review*, XXXIX (April, 1931), pp. 288–92.

This article presents an astute analysis of the three factors to which the sizes of high-school classes are functionally related, namely, the teacher, the pupil, and the task at hand. The question, therefore, of whether or not we shall have large or small classes must be discussed in terms of these three variables, a task ably performed by the author of this article.

In Paper Covers

MAURER, ALBERT V. *The Junior High School.* St. Louis, Missouri: Concordia Publishing House, 1929. 36 pp.

The writer proposes the introduction of the junior high school into the Lutheran school system and to this end gives a brief description and analysis of the plan, which he particularly illustrates by its application in the First Lutheran School of Fort Smith, Arkansas.

JAMES F. FULLINGTON

Character Education, A Symposium of Papers on Its Culture and Development. New York: Benziger Brothers, 1930. xii+124 pp.

This bulletin is a collection of papers on character education which were read before the National Catholic Educational Association at the Catholic University of America in 1929. It discusses the problems of character education within the context of the Catholic religion and parochial-school education. It is a valuable document for those interested in this field.

W. W. CHARTERS

DEPARTMENT OF SECONDARY SCHOOL PRINCIPALS, NATIONAL EDUCATION ASSOCIATION. *Diploma Practices in Secondary Schools.* Cicero, Illinois: H. V. Church, Exec. Sec'y, 1930. 31 pp. (Bulletin of the Department of Secondary School Principals of the National Educational Association, No. 32)

The data for this study were furnished by 300 secondary-school principals located in 45 states and the District of Columbia. The schools were classified into seven groups according to enrollment. The study reveals considerable variation in size, cost, material, and wording of the diplomas, but at the same time there seems to be a distinct trend toward standardization of forms. More than 90 per cent of the schools report that a standard form has been adopted. This is more true in the larger cities than in the smaller ones. The variations in courses of study pursued results in differentiations in wording of diplomas in many schools, one metropolitan school reporting as many as seventeen different diploma forms in use. The cost of diplomas varies from $.06 to $5.25 per unit. The smaller schools usually have the more expensive forms often specializing in flourishes, such as engraving, sheepskins, and Japanese vellum. It is also revealed that the smaller schools

are more prone to change the form of the diploma from year to year. An innovation in diploma form is the folder type which has recently been introduced. It was found that approximately 25 per cent have adopted this type of diploma. In terms of size by area it was found that the largest diploma was 48 times as large as the smallest. A trend was revealed in favor of the smaller size, simplicity of style and make-up, uniformity of inscription, and appropriate variations for differentiations in subject-matter pursued.

R. H. ELIASSEN

MABIE, ETHEL. *Language Development in Primary Grades Through School Activities.* Bloomington, Illinois: Public School Publishing Company, 1930. 96 pp.

MABIE, ETHEL. *Language in Use in Third Grade School Activities.* Bloomington, Illinois: Public School Publishing Company, 1930. vii+107 pp.

MABIE, ETHEL. *Suggestions to Teachers of Language in Use in Third Grade School Activities.* Bloomington, Illinois: Public School Publishing Company, 1930. 50 pp.

Units which adapt themselves to community and world events, to holidays, and various school celebrations are suggested in this first pamphlet, which, according to the author, aims to "develop perceptions and powers which will function as the pupils meet social requirements later in life." Activities which encourage inquiring attitudes, habits of observation, constructive instincts, social attitude, co-operative feeling, expressive desires and abilities, sustained attention, concentrated effort, and opportunity for fixing good language habits are suggested.

The second of these publications is a language textbook which seeks to vitalize the content of language work through projects such as community trips, school papers, banking, attendance records, parties, and programs. It provides guidance for the various language activities implied, stimulates children to write by giving numerous unfinished stories which each child is to complete in his own way, and, lastly, attainment tests of language essentials utilized in the various units.

The third pamphlet is designed to help teachers make use of the textbook *Language in Use in Third Grade School Activities.* In addition to suggesting possible uses of the material in the text, it proposes ways of building backgrounds and supplementing the book. It would be particularly valuable to inexperienced teachers or to those who are attempting to modernize their language instruction without actually embarking on a program of units of work.

MARGARET DUNCAN

MACDONALD, MARION E. *Practical Statistics for Teachers.* New York: Macmillan Company, 1930. x+176 pp.

This book, in the words of the author, "is essentially a work book." It is a paper-bound volume and has the large pages which are characteristic of work books. The sheets are perforated. As the title indicates, the book represents an effort to provide that training in statistics which is needed by the classroom teacher. Hence, some of the techniques which the administrator or the specialist in educational research may need have been omitted. In many respects the work book is excellent. Illustrative material is well

selected, problems provided for solution reflect an acquaintance with actual educational conditions, space and co-ordinate rulings are provided for solutions and graphs, and figures are clearly drawn and well printed.

In other respects, however, the book contains errors and unfortunate violations of conventions. The statement is made on page 113 that the quartile deviation "indicates the average number of points that the middle 50 per cent of the cases vary or deviate from the median." This is not true. The quartile deviation is the average (median) number of points by which *all* the cases deviate from the median (assuming a symmetrical distribution). The tables given for transmuting R and rho into r contain errors. Furthermore, one of these gives r values to three decimal places and the other to four, an inconsistency which is hard to justify. No distinction is made between a frequency polygon and a frequency curve. In constructing a frequency polygon the figure is connected with the base at one end but left hanging at the other. Contact is made with the base at the beginning of the first interval instead of at the mid-point of the first unoccupied interval. The intelligence quotient is defined as "the ratio between the mental age and the chronological age" (p. 10)) instead of the ratio of mental age to chronological age. Quadrants have been lettered $\frac{A|B}{C|D}$ instead of numbered in the conventional manner.

Teachers will find this work book an aid in the study of statistics. A few changes before the next edition is published will add materially to its value.

R. L. MORTON
Ohio University

Books to Read

REISNER, EDWARD H. *The Evolution of the Common School.* New York: Macmillan Company, 1930. xii+590 pp.

The author traces the development of the school of the common people, as distinct from the secondary school or school of the educated classes, from the later Middle Ages to the present, with special emphasis on developments in this country. It is the first extensive treatment in English of this subject since the publication in 1912 of S. C. Parker's *A Textbook in the History of Modern Elementary Education.* Professor Reisner has, therefore, rendered an important service in furnishing an up-to-date textbook in a comparatively neglected field.

As a text, the book has much to recommend it. The author manifests the same happy gifts of expression and summarization which made his *Historical Foundations of Modern Education* so readable. A good deal of material is included which has hitherto been largely neglected by our textbook writers: the account of the rise of the graded school system and Chapter xx, "In the Grip of the School Machine" are cases in point.

It is not without its shortcomings, however. The student would be assisted by a grouping of the twenty-seven chapters under a few large heads. Errors of fact and statements that require qualification have not been altogether avoided, nor is oversimplification of historical explanation altogether absent. Events are sometimes dated by the Old Style instead of the New, without explanation. The chief defect would seem to be the very general character of the treatment and the relative scarcity of specific information. In

this respect it resembles the *Historical Foundations* mentioned above, and differs sharply from the author's *Nationalism and Education Since 1789*. Many passages assume more general historical information than the average college student possesses; the information given would have to be supplemented from other sources if the student were to secure a sufficiently clear idea of the events and movements under consideration. The Protestant Reformation, for instance, as distinct from its educational results, is treated in about two pages. Without more information than is here given concerning the careers of some of the important educational reformers, it is difficult to see how they could be more than mere names to the beginning student.

R. H. ECKELBERRY

O'SHEA, HARRIET EASTABROOKS. *A Study of the Effect of the Interest of a Passage on Learning Vocabulary*. New York: Teachers College, Columbia University, 1930. v+122 pp. (Teachers College, Columbia University, Contributions to Education, No. 351)

After devoting twenty of the one hundred pages to a review of the literature pertaining to "aspects of interest," and "opinions about interest" the investigator proceeds with "the scope of this experiment" which is "an attempt to evaluate the effect of interest upon a particular piece of learning." Keeping in mind the earlier study of Jordon's which summarizes the traits which make stories interesting to boys and girls, the investigator selected passages for this experiment in which the instinctive appeals were strongest. She employed parts of *The Star of Gettysburg*, *Little Women*, *Treasure Island*, *Pollyanna*, and *The Succession of Forest Trees*. A vocabulary test based on the hard woods in these passages was used, as was also the National Intelligence Test. More than a thousand children in the fifth, sixth, seventh, and eighth grades in the public schools of a middle-western city participated in the experiment. Factors which might conceivably effect learning, such as race, parents' occupation, and cultural experiences at home were considered in selecting the subjects for the experiment.

A most elaborate use is made of statistical procedures, and the summary is excellent. Of greatest significance is the finding that interest apparently is a mental function distinct from intelligence, but interest may be present and absent at different levels of intelligence. The educational implications of the study offer the classroom teacher practical suggestions which can be carried on in the average schoolroom.

RUTH STREITZ
University of Cincinnati

SEELY, HOWARD FRANCIS. *Enjoying Poetry in School*. Richmond, Virginia: Johnson Publishing Company, 1931. xv+267 pp.

The title of this book is significant. We have had books on the "teaching" and on the "study" of poetry, but this is the first which assumes throughout that the pupil's experience with literature in the school should not be fundamentally different from what it is in normal life situations. It thus sharply attacks the conventional scholastic treatment of books in school and proposes in its place a humanistic and natural procedure.

In the first three chapters Professor Seely discusses the necessary attitude

of the teacher toward literature and its place in education. In the remaining four chapters he presents an eminently practicable method of teaching poetry and, by implication, other types of literature to achieve sound educational aims. Every phase of the handling of poetry both in and out of the classroom is carefully described and illustrated by numerous specific examples drawn from actual classroom situations. Moreover, the author assures us that he advocates no materials or methods which have not been successfully employed by him and other teachers.

This book marks an important step in the development of modern methods of presenting literature in the high school. It should be in the hands of every progressive teacher of English.

JAMES F. FULLINGTON

TIEGS, E. W. AND CRAWFORD, CLAUDE C. *Statistics for Teachers.* Boston: Houghton Mifflin Company, 1930. xvi+212 pp.

This book is written from the point of view of the needs of the large number of unspecialized workers rather than research experts. It presents nothing new in the statistical field, no new methods, nor any computational devices. The chapter on labor-saving devices recommends the use of various tables of squares, square roots, products, and quotients, as well as such devices as slide rules, calculating machines, and the Hollerith Sorting Machine. Short-cut methods of computation are frowned upon as likely to decrease accuracy.

Computational accuracy, checking formulas, and the easier methods of computation are practically untouched. The short-cut procedures which the authors frown upon have adequate computational checks in themselves. The most economical procedure in statistics is one which makes use of all the short-cut methods and which tends to proceed step by step so that an error cannot be carried into further computations. The only way in which this text differs to any degree from the ordinary elementary statistics textbook is that each chapter has been provided with a set of true-false questions which a student may use in study or which a teacher may use in developing an understanding of the theory or principles which are discussed in those chapters.

HAROLD A. EDGERTON

ENGLEHARDT, FRED. *Public School Organization and Administration Syllabus.*. Boston: Ginn and Company, 1930. viii+176 pp.

This is a preliminary outline of what presumably will in time be expanded into a book. As a syllabus it is meager in its offering except for questions and problems at the end of each of the twenty-four topics. There is nothing new or radical in its organization, and it is almost too thin to be of much service to the student in this form. The instructor who is too busy to make his own topical syllabus could use it to advantage.

E. E. LEWIS

NEW TESTS

A PROMISING device for analyzing behavior problems in small children is available in the Haggerty-Olson-Wickman Behavior Rating Schedules, published by the World Book Company, Yonkers-on-Hudson, New York. The schedules consist of two parts, Schedule A, Behavior Problem Record which is a check list of various types of behavior problems in terms of frequency of occurrence, and Schedule B, Behavior Rating Scale which consists of scales for rating 24 traits. Both schedules are essentially rating scales, and demand observers who have had ample contact with the children and who have made careful observations of their behavior. The validity of the rating may be judged from the fact that 50 per cent of the children who became acute problem cases in the child-guidance clinic of the University of Minnesota fell into the 10 per cent of the school population who were rated as having the most undesirable tendencies.

The composite scale on Schedule A and B correlated .76 with the frequency with which a group of children were referred by teachers and monitors to the office of the elementary school principal. Various measures of reliability of the ratings are given, indicating an average coefficient of approximately .70. These schedules are not in the nature of achievement tests, but should be useful for selecting pupils who need wise guidance in order to correct incipient tendencies to maladjustment. Their value as compared to ordinary observation of children lies in the definition of a standard list of traits to observe and the provision of a system of weighting in evaluating each type of behavior observed.

A NEW test is described in a recent Columbia University Contribution to Education, *Tests of the Interpretative Reading of Poetry for Teachers of English*, by Helene W. Hartley, published by Teachers College of Columbia University (Teachers College, Columbia University, Contributions to Education, No. 433). Miss Hartley designed the test for use with English teachers in training and for advanced courses in English generally. It is not to measure one's enjoyment of poetry nor

one's appreciation of the artistic beauty of a selection, but is an attempt to test the ability to interpret the meaning of a poem.

The test is constructed in two forms, each of which contains twenty-six short selections of poetry. Each selection is followed by four choices, and the student is asked to check the one which best expresses the meaning of the selection. This technique involves certain assumptions which have not been adequately checked. It is assumed that the ability to interpret several short selections is highly correlated with the ability to understand a complete poem of much greater length. A more critical assumption which demands evidence is that the ability of a student to check the best statement of meaning given below each selection is highly correlated with the ability to derive the appropriate meaning by himself.

As measures of validity, the test results were correlated with amount of English training, with the Abbott-Trabue Test of Poetry Appreciation, with the Whipple Prose Reading Test, with the Kennon Test of Literary Vocabulary, and with a Freshman Placement Test. The coefficients were all between .57 and .79. However, the author makes no mention of Cavins' test which has a similar purpose, and which one would expect to be a more useful criterion of validity than any of these other tests.

The average reliability coefficient of the Hartley Test is approximately .80 when both forms are used. This is high enough to serve as a measure for the average standing of a group but cannot be used alone for a precise measurement of individual students. Only through trial by various teachers can we determine how useful the test will be in evaluating the ability of students of English to interpret poetry. It might perhaps be used to obtain one type of evidence of strength or weakness in the training of English teachers.

R. W. TYLER